

**Notice of Allowability**

Application No.

09/838,862

Applicant(s)

RAMADAN, TAREK ABD ELAZIM

Examiner

Jerry T. Rahl

Art Unit

2874

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicant's Response to Election/Restriction Requirement received 07 February 2005.
2. ☒ The allowed claim(s) is/are 1-20 and 30.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

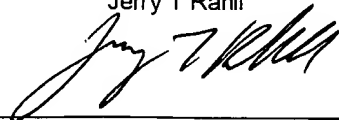
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

Jerry T Rahl



### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.
2. This application is in condition for allowance except for the presence of claims 21-29 drawn to inventions non-elected without traverse. Accordingly, claims 21-29 have been cancelled (see below). Further, the amendments to Claims 8 and 30 are believed to simply fix minor typographical errors.
3. The application has been amended as follows:
4. Claim 8 is amended to read: "8. The switch of Claim 2, wherein said single-mode to multi-mode backward coupler further comprises a plurality of output waveguides, each coupled to said multi-mode waveguide and receiving one of said plurality of single-mode signals."
5. Claims 21-29 are canceled.
6. Claim 30 is amended to read, "30. An add/drop multiplexer system for adding and dropping unequally spaced channels of a single-mode waveguide, comprising:
  - (a) a substrate having at least a first surface;
  - (b) a plurality of single-mode waveguides having unequally spaced channels mounted on said first surface;

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(c) a common single-mode to multi-mode waveguide grating-assisted backward-coupler, mounted on said first surface of said substrate and optically coupled to each of said plurality of single-mode waveguides; and

(d) a plurality of digital optical switches, each having a plurality of output waveguides, optically coupled with said plurality of single-mode waveguides.”

### ***Drawings***

7. The drawings are objected to because the labeling is not clear and uniform. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Information Disclosure Statement***

8. The information disclosure statement filed 25 July 2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. There are no copies of the cited non-patent literature. It has been placed in the application file, but the information referred to therein has not been considered.

***Allowable Subject Matter***

9. The following is an examiner's statement of reasons for allowance. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

10. Claims 1-20 and 30 are allowed.

11. Claims 1-20 describe a permutation switch for switching wavelength-division multiplexed signals received from one or more optical waveguides having a single-mode to multi-mode backward coupler, coupled to a surface of a substrate for receiving single-mode wavelength division multiplexed signals from said one or more optical waveguides, and for backward coupling said signals into a plurality of single-mode signals, each having its own unique mode.

12. U.S. Patent No. 5,684,899 to Ota describes a device for processing wavelength-division multiplexed signals received from one or more optical waveguides (109f, 109g) having a single-mode to multi-mode backward coupler (102, 103), coupled to a surface of a substrate (101) for

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receiving single-mode wavelength division multiplexed signals from said one or more optical waveguides (109f, 109g), and for backward coupling said signals into a plurality of single-mode signals (109a-d, 109h-k) (see Figure 16 and Columns 14-15). Ota does not describe each of the backward-coupled single-mode signals having its own unique mode.

13. Claim 30 describe An add/drop multiplexer system for adding and dropping unequally spaced channels of a single-mode waveguide having a plurality of single-mode waveguides having unequally spaced channels mounted on a substrate, a common single-mode to multi-mode waveguide grating-assisted backward-coupler mounted on the substrate and optically coupled to each of the plurality of single-mode waveguides and a plurality of digital optical switches, each having a plurality of output waveguides, optically coupled with said plurality of single-mode waveguides.

14. While several multiplexer systems utilize a common single-mode to multi-mode waveguide grating-assisted backward-coupler mounted on a substrate optically coupled to each of a plurality of single-mode waveguides, the prior art does not describe or reasonably suggest a plurality of digital optical switches coupled to the plurality of single-mode waveguides.

15. U.S. Patent No. 5,684,899 to Ota remains the closest prior art of record in this application. For the reasons stated above, however, Claims 1-20 and 30 herein are deemed to patentably distinguish over Ota and all other prior art of record.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents Nos. 5,937,113 to He et al., 6,657,723 to Cohen et al., 5,724,463 to

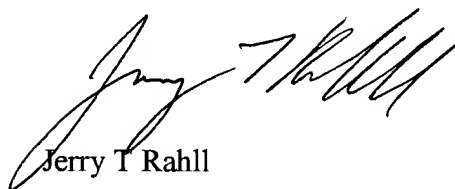
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Deacon et al. and 5,911,018 to Bischel et al. describe multiplexing devices having backward couplers.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry T. Rahll whose telephone number is (571) 272-2356. The examiner can normally be reached on M-Th (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jerry T Rahll



AKM ENAYET ULLAH  
PRIMARY EXAMINER